



Energy Storage
at the service of **Evolving Energy Systems**
and **Renewables Integration**



ABU DHABI
19 JANUARY
2016

ENERGY STORAGE IN GCC: A NEW LARGE SCALE STORAGE SOLUTION FROM EUROPE

Frank VERSCHRAEGEN
Project Director, DEME Group

Frank Verschraegen is project director of the consortium iLand (DEME, Jan De Nul, Electrabel, Flemish and Walloon public financial holdings), set up for the engineering, construction and exploitation of a full-scale energy-storage-island project in the North Sea. As project director of offshore-energy-storage projects at the company DEME, he is dealing with innovative, future-oriented projects and technologies concerning electricity at sea. Mr Verschraegen holds degrees in electromechanical engineering (University of Ghent, Belgium) and in industrial management (University of Louvain, Belgium) and is an experienced leader in development of high-tech businesses and projects in multilingual, international contexts.



16.15 – 16.30 **SESSION 3: CONCLUSION**

LAUNCH OF THE WORLD ENERGY COUNCIL REPORT ON ENERGY STORAGE

Paul MOLLET
World Energy Council

Paul Mollet is Regional Manager for Middle East, Gulf States & North Africa. Paul coordinates and facilitates activities, events and participation of World Energy Council Member Committees in the Middle East & Gulf States. He has two decades of experience working in the Gulf, including periods in Qatar, UAE and Oman. His role is to increase the Council's presence and activities in this important hydrocarbon-producing region.



Moderation

Paula ABREU MARQUES
Head of Unit for renewable Energy, DG ENERGY (EC)

Since August 2013, Mrs Abreu Marques is the Head of Unit for "Renewables and CCS policy" in the European Commission, DG ENER. She is responsible for defining and steering the EU renewable energy policy, including the implementation of the Renewable Energy Directive and the definition of a policy framework for Post-2020, as well as the EU policy strategy in the field of Carbon Capture and Storage. Previously Mrs Abreu Marques was the Head of Unit for "International Relations and Enlargement" in the European Commission, DG ENER. She was responsible for defining and steering the general approach in the area of international energy relations set in the context of the EU energy policy strategy, including the negotiation and coordination of the position vis-à-vis third countries or groups of countries and international organisations, procedures aiming at the conclusion of accession, association or cooperation agreements with third countries and regions, including energy trade related issues. She joined the European Commission in 1994.



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The energy system is constantly evolving and increasing in complexity. The increasing variability of power generation capacity presents new challenges to the various operators, while at the same time the security of supply is growing in importance. The future energy system should be more interlinked, more efficient and more flexible.

Energy storage is one of the important elements in the energy system contributing to the needed flexibility and security. It is widely recognized as a means of enabling increased penetration of renewable energy, therefore supporting energy security and climate change goals. In addition, energy storage can supply more flexibility and balancing to the grid, providing a back-up to intermittent renewable energy from sun and wind.

Energy storage includes a large set of both centralised and distributed technologies that enable to better integrate our electricity and heat systems. Recent research and development efforts have led to significant cost reductions in energy storage technologies, although additional efforts are needed in order to sustain this trend and to increase existing storage capacities and efficiencies. The International Energy Agency estimates that in order to sustain the decarbonisation of the electricity sector, 310 GW of additional grid-connected electricity storage capacity would be needed in the United States, Europe, China and India. In this new scenario, storage provides also new services to electricity generators and consumers, allowing for the generation of new revenues.

Europe has always been a laboratory for renewable development. This workshop will provide an overview on the general EU policies and market context that is shaping the energy storage sector, as well as the barriers that still have to be lifted. The workshop will also look at the numerous technologies and engineering solutions that have been developed and tested in Europe to integrate storage in the current energy system.

Duration: 2 hours
Venue: Main conference room (ADNEC)

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14.30 - 14.45 WELCOME WORDS BY THE EUROPEAN COMMISSION

Patrizio FONDI
Ambassador, EU Delegation to the UAE

Ambassador Patrizio Fondi has been Head of the EU Delegation to the UAE since 06/09/2015. Mr. Fondi has a 30 years experience serving different roles in the Italian Ministry of Foreign Affairs. Previously he was Ambassador of Italy to the Hashemite Kingdom of Jordan and Diplomatic Advisor of the Italian Minister of Cultural Heritage and Activities. He also served as Deputy Permanent Representative of Italy to UNESCO and BIE (Bureau International des Expositions) in Paris. He worked as well in the Italian Diplomatic Missions in Tirana, New York (United Nations) and Stockholm.



14.45 – 15.15 SESSION 1: TOWARDS NEW ENERGY SYSTEMS, THE NEED FOR FLEXIBILITY

THE VALUE OF EUROPEAN PROJECTS FOR THE PROMOTION OF STORAGE SOLUTIONS BEST PRACTICE FROM THE INGRID PROJECT

Massimo BERTONCINI
Director of the European R&D projects, Engineering Ingegneria Informatica, INGRID PROJECT

Dr. Massimo Bertoncini, PhD, is the Director of R&D European projects within Engineering Ingegneria Informatica (<http://www.eng.it>), with a specific mandate to shape and lead on the corporate innovation on Smart Energy & Green IT. He has been appointed as Director of INGRID (High-capacity hydrogen-based green-energy storage solutions for grid balancing) and GEYSER (Green networked Data Centres as Energy Prosumers in smart city environment European R&D projects). He serves European Commission as Scientific Experts in ICT for Smart Energy Systems, Multi-carrier Energy systems, Energy Storage Integration. He is author of numerous scientific publications in relevant conferences and journals.



THE BUSINESS CASE FOR STORAGE TECHNOLOGIES WITHIN THE GULF COUNTRIES

Ahmed AL-EBRAHIM
CEO, GCCIA

Ahmed Ali Al-Ebrahim is the Chief Executive Officer (CEO) of GCC Interconnection Authority. He has more than 28 years experience in power systems as well as infrastructure projects planning. Ahmed holds an MBA in Business Administration (with Distinction) from DePaul University, USA in 2003, M.Sc. in Electrical Power Engineering (with Distinction) from the University of Strathclyde in Scotland in 1999, and B.Sc. in Electrical Power Engineering from the University of Texas at Austin - USA in 1986. He also completed the Gulf Executive Development Program II from Darden Business School - University of Virginia - USA in 2001. He is a Board Member and the Technical Committee Chairman of GCC Cigre, and member of Cigre Study Committee SC C5 "Electricity Markets and Regulations". He has authored more than 25 papers in several regional and international conferences, mostly in the field of restructuring of electricity markets and possible electricity market models for Bahrain, GCC and the region.



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15.15 – 16.15 SESSION 2: ENGINEERING SOLUTIONS

ACCELERATING ENERGY STORAGE DEPLOYMENT FOR A RANGE OF SYSTEM LEVEL APPLICATIONS FROM WASTE MANAGEMENT TO POWER GENERATION AND BUILDING INFRASTRUCTURE

Duncan JOSH
Senior engineer, Energy, Atkins

Senior Energy Engineer, Duncan Josh, has been with Atkins for over seven years focusing on low carbon, renewable energy and energy storage projects. He holds two MSc's in these areas and has worked on a wide range of projects including energy studies for cities, towns and business parks, technology research and assessments, auditing of generating plant, modelling of plant and wider systems. For the last two and half years Duncan has supported the Energy Storage Programme for the UK Department of Energy and Climate Change (DECC) helping to develop the assessment processes for candidate projects, reviewing applications and acting as a monitoring officer for several of the supported projects.



HYDRO POWER AS A LARGE ENERGY STORAGE PROVIDERS

Ralf GRETHER
Head of Product Management, Patent and Innovation, Voith

Mr. Grether joined Voith Hydro 2002, having held before various project management, engineering, and sales positions in ABB/Alstom after his graduation in telecommunication engineering at the Mannheim University of Applied Sciences in Germany. With his experience in planning and implementation of automation and control systems for hydro and diesel power plants, he became Head of Project Management of Hydro Power Control Technology in Voith Hydro's German Operating Unit until he joined the Product Management Team in 2007. He was responsible for Automation in Product Management. Since 2010 he is heading the Voith Hydro Product Management, Patent and Innovation



ENGINEERING SOLUTIONS AT THE SYSTEM LEVEL: A TRANSPORT SYSTEM OPERATOR (TSO) PERSPECTIVE

Anna Carolina TORTORA
Head of the Department of Innovation and Development, TERNA

Ms Tortora heads the Department of Innovation and Development within Terna Storage, the Italian TSO's subsidiary in charge of the implementation of Terna's €300 Million Energy Storage projects. An MIT alumna with an aerospace background, Miss Tortora first ventured into the energy field within Terna's Business Development department, where she actively participated in making the case for the deployment of Energy Storage within the Italian national HV grid. She has since led the department currently responsible for Terna's acquisition and installation of 40 MW of Power Intensive Energy Storage Systems. Her activities focus on the present as well as the future applications of storage technologies in order to determine how to best integrate them with the national grid's control system.

